CLAIMS

1. (original) A method for configuring an optical network having a plurality of nodes and a plurality of light-paths between the nodes, comprising the steps of:

firstly concatenating together a first set of the light-paths into circular segments; and

secondly concatenating together a second set of the light-paths into non-circular segments, the second set of the light-paths being comprised of a remainder of the plurality of light-paths less the first set of the light-paths.

2. (original) A method according to claim 1, wherein the firstly and second concatenating steps are performed so that no light-path in any of the circular segments and non-circular segments overlaps another light-path in the same circular segment and non-circular segment.

3. (original) A method according to claim 1, wherein the circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being the same one of the plurality of nodes.

4. (original) A method according to claim 3, wherein the circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.

5. (original) A method according to claim 1, wherein the non-circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being different ones of the plurality of nodes.

6. (original) A method according to claim 5, wherein the non-circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.

7. (original) A method according to claim 1, wherein the firstly concatenating step includes the step of searching the plurality light-paths in a top-down fashion so that circular segments having fewer light-paths are concatenated together before circular segments having more light-paths.

8. (original) A method according to claim 1, wherein the secondly concatenating step includes the step of searching the remainder of the plurality of light-paths in a reverse top-down fashion so that non-circular segments having more light-paths are concatenated together before non-circular segments having fewer light-paths.

9. (original) A method according to claim 1, wherein the firstly concatenating step includes the steps of:

firstly determining whether any N of the light-paths can be concatenated together to form one of the circular segments, wherein N is greater than or equal to one;

adding the any N light-paths determined in the firstly determining step to the first set of the light-paths;

secondly determining whether any N+M of the light-paths, less the any N light-paths added to the first set of the light-paths, can be concatenated together to form another of the circular segments, wherein M is greater than or equal to one; and

adding the any N+M light-paths determined in the secondly determining step to the first set of the light-paths.

10. (original) A method according to claim 1, wherein the secondly concatenating step includes the steps of:

firstly determining whether any N of the remainder of the plurality of light-paths can be concatenated together to form one of the non-circular segments, wherein N is less than or equal to a number of the plurality of nodes;

adding the any N light-paths determined in the firstly determining step to the second set of the light-paths;

secondly determining whether any N-M of the remainder of the plurality of light-paths, less the any N light-paths added to the second set of the light-paths, can be concatenated together to form another of the non-circular segments, wherein M is greater than or equal to one; and

adding the any N-M light-paths determined in the secondly determining step to the second set of the light-paths.

11. (original) A method according to claim 9, wherein the secondly concatenating step includes the steps of:

thirdly determining whether any J of the remainder of the plurality of light-paths can be concatenated together to form one of the non-circular segments, wherein J is less than or equal to a number of the plurality of nodes;

adding the any J light-paths determined in the thirdly determining step to the second set of the light-paths;

secondly determining whether any J-K of the remainder of the plurality of light-paths, less the any J light-paths added to the second set of the light-paths, can be concatenated together to form another of the non-circular segments, wherein K is greater than or equal to one; and

adding the any J-K light-paths determined in the secondly determining step to the second set of the light-paths.

12. (original) A method according to claim 1, wherein the firstly and secondly concatenating steps are performed so that a number of the non-circular segments is minimized.

13. (original) A method according to claim 1, further comprising the step of:
assigning a respective unique wavelength to each of the circular segments and non-circular segments in accordance with an OWDM scheme.

14. (original) An optical network comprising:

a plurality of nodes; and

a plurality of light-paths between the nodes,

wherein a first set of the light-paths are concatenated together into circular segments,

and

wherein a second set of the light-paths are concatenated together into non-circular segments, the second set of the light-paths being a remainder of the plurality of light-paths less the first set of the light-paths.

15. (original) An optical network according to claim 14, wherein the first set of light-paths are concatenated together by searching the plurality light-paths in a top-down fashion so that circular segments having fewer light-paths are concatenated together before circular segments having more light-paths.

16. (original) An optical network according to claim 14, wherein the second set of light-paths are concatenated together by searching the remainder of the plurality of light-paths in a reverse top-down fashion so that non-circular segments having more light-paths are concatenated together before non-circular segments having fewer light-paths.

17. (original) An optical network according to claim 14, wherein a number of the non-circular segments is minimized.

18. (original) An optical network according to claim 14, wherein each of the light-paths concatenated together in the circular segments and non-circular segments are assigned respective unique wavelengths in accordance with an OWDM scheme.

19. (original) An optical network according to claim 14, wherein no light-path in any of the circular segments and non-circular segments overlaps another light-path in the same circular segment and non-circular segment.

20. (original) An optical network according to claim 14, wherein the circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being the same one of the plurality of nodes.

21. (original) An optical network according to claim 20, wherein the circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.

22. (original) An optical network according to claim 14, wherein the non-circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being different ones of the plurality of nodes.

23. (original) An optical network according to claim 22, wherein the non-circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.